In the Claims:

Please cancel claims 2 and 7, and amend claims 1, 3-6 and 8-10 without prejudice. The status of all claims is as follows:

1. (Currently Amended) A computer-readable storage medium storing a program enabling a shared-memory type scalar parallel computer to realize a parallel processing method of an eigenvalue problem for a shared-memory type scalar parallel computer, comprising:

dividing a real symmetric matrix or a Hermitian matrix to be processed into blocks which have rectangular shape along a column of a matrix to be processed, copying each divided block into a work area of a memory and tri-diagonalizing the blocks ~~using products between the blocks~~ in the work area by (1) dividing a block into halves along a column of the matrix, (2) copying a former half of the matrix in a memory area for an array variable, (3) applying reduction to tridiagonal form by use of Householder transform to data in the array variable, (4) obtaining tri-diagonalization of data in the array variable, (5) copying back data in the array variable to the work area, (6) setting a block to be processed as a latter half of the matrix, and (7) returning to (1) until all data in the block is processed;

calculating an eigenvalue and an eigenvector based on ~~the~~ a tri-diagonalized matrix; and converting the eigenvector calculated based on the tri-diagonalized matrix by Householder conversion in order to transform the calculation into parallel calculation of matrices with a prescribed block width and calculating an eigenvector of an original matrix.

2. (Canceled)

3. (Currently Amended) The ~~program~~ computer-readable storage medium according to claim 1, wherein in said tri-diagonalization step, each divided block is further divided into smaller blocks so that data ~~may not be~~ is not read across a plurality of pages of a cache memory and each processor ~~can calculate~~ calculates such divided blocks in parallel.

4. (Currently Amended) The ~~program~~ computer-readable storage medium according to claim 1, wherein in said original matrix eigenvector step, a matrix, to which Householder conversion is applied, ~~can be~~ is created by each processor simultaneously creating an upper triangular matrix, which is a small co-efficient matrix that ~~can be~~ is processed by each processor.

5. (Currently Amended) The ~~program~~ computer-readable storage medium according to claim 1, wherein in said original matrix eigenvector calculation step, the said eigenvector of the original matrix ~~can be~~ is calculated by evenly dividing the second

dimensional direction of a stored bi-dimensional array in accordance with the number of processors and assigning each divided area to a processor.

6. (Currently Amended) A parallel processing method of an eigenvalue problem for a shared-memory type scalar parallel computer, comprising:

dividing a real symmetric matrix or a Hermitian matrix to be calculated into blocks which have rectangular shape along a column of a matrix to be processed, copying each divided block into a work area of memory and tri-diagonalizing the blocks ~~using products between the blocks~~ in the work area by (1) dividing a block into halves along a column of the matrix, (2) copying a former half of the matrix in a memory area for an array variable, (3) applying reduction to tridiagonal form by use of Householder transform to data in the array variable, (4) obtaining tri-diagonalization of data in the array variable, (5) copying back data in the array variable to the work area, (6) setting a block to be processed as a latter half of the matrix, (7) returning to (1) until all data in the block is processed;

calculating an eigenvalue and an eigenvector based on ~~the~~ a tri-diagonalized matrix; and

converting the eigenvector calculated based on the tri-diagonalized matrix by Householder conversion in order to transform the calculation into parallel calculation of matrices with a prescribed block width and calculating an eigenvector of an original matrix.

7. (Canceled)

8. (Currently Amended) The parallel processing method according to claim 6, wherein in said tri-diagonalization step, each divided block is further divided into smaller blocks so that data ~~may not be~~ is not read across a plurality of pages of a cache memory and each processor ~~can process~~ processes such divided blocks in parallel.

9. (Currently Amended) The parallel processing method according to claim 6, wherein in said original matrix eigenvector step, a matrix, to which Householder conversion is applied, ~~can be~~ is created by each processor simultaneously creating an upper triangular matrix, which is a small co-efficient matrix that ~~can be~~ is processed by each processor.

10. (Currently Amended) The parallel processing method according to claim 6, wherein in said original matrix eigenvector calculation step, the said eigenvector of the original matrix ~~can be~~ is calculated by evenly dividing the second dimensional direction of a stored bi-dimensional array in accordance with the number of processors and assigning each divided area to a processor.